

Spontaneous Uterine Rupture in a 17-Week Pregnancy on an Unscarred Uterus: A Case Report and Literature Review

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Abstract

Uterine rupture is a rare but severe obstetric complication, typically associated with scarred uteri due to previous surgeries or trauma. Spontaneous rupture in an unscarred uterus is exceptionally uncommon, particularly during early pregnancy, and poses significant risks to maternal and fetal health. We report the case of a 32-year-old G3P1 woman presenting with acute abdominal pain and mild vaginal bleeding at 17 weeks of amenorrhea. The patient had no prior uterine surgeries or evident risk factors for uterine rupture. Clinical examination revealed hemodynamic instability, abdominal tenderness, and ultrasound findings of an empty uterus, a non-viable fetus within the abdominal cavity, and moderate hemoperitoneum. Emergency exploratory laparotomy confirmed an 8 cm horizontal fundal rupture of the uterus with the fetus intact in its gestational sac floating in the peritoneal cavity. Conservative surgical management was performed.

Keywords: Uterine Rupture, Second Trimester, Unscarred Uterus

Abbreviations: URUU: Uterine Rupture in Unscarred Uteri

Introduction

Uterine rupture on an unscarred uterus is a rare obstetric complication that poses immediate risks, not only to the patient's life but also to their obstetric prognosis. Fetal and neonatal mortality and morbidity remain significantly high [1,2].

This complication is particularly severe as it affects young women in their reproductive years and, in some cases, even primigravidas. While it occurs predominantly in scarred uterus, it remains exceptional in unscarred uterus. Data on

uterine rupture in unscarred uteri (URUU) are very limited. Published studies estimate fetal mortality to range from 12% to 35%, with a hysterectomy rate of 20% to 30% [3,4]. The risk factors are poorly defined. We report a case of uterine rupture during a 17-week pregnancy in a patient with an unscarred uterus.

Case Report

The patient, Mrs. A, a 32-year-old G3P1 woman, was transferred from a peripheral hospital located 20 km from the

Casablanca University Hospital for acute surgical abdomen during a 17-week amenorrhea. Obstetric history included a spontaneous miscarriage without intrauterine intervention in May 2018 and a term vaginal delivery of a 3450 g neonate after a rapid two-hour oxytocin-augmented labor in September 2020. She had not initiated prenatal consultations or undergone an ultrasound for her current pregnancy, corresponding to 17 weeks of amenorrhea based on her last menstrual period.

Her clinical history started one week prior to admission with mild vaginal bleeding and hypogastric pain. Following consultation with a general practitioner, she was prescribed an antispasmodic. Due to persistent symptoms, she was admitted to a regional hospital where she received 500 mg intramuscular progesterone. Her symptoms worsened, leading to her transfer to the maternity unit at the Abderrahim Harrouchi Children's Hospital.

On admission, her blood pressure was 95/54 mmHg, heart rate 113 bpm, respiratory rate 25 breaths/min, and temperature 37°C. She exhibited agitation and marked pallor. Abdominal examination revealed non-distended but diffusely tender abdomen. Vaginal examination showed a posterior, long, and closed cervix, with minimal bright red bleeding on

the glove. Rectal examination revealed a high fecal impaction. Ultrasound demonstrated an empty uterus with a laterally located gestational sac containing a non-viable 17-week fetus and moderate peritoneal effusion.

Bloodwork revealed hemoglobin at 9.6 g/dL, hematocrit at 27.9%, leukocytes at 11,000/mm³ with neutrophil predominance, platelets at 250,000/mm³, and a blood type of O Rh-positive. Renal function and electrolytes were normal. Given the clinical presentation, exploratory laparotomy was planned to rule out uterine rupture or ectopic pregnancy. Under general anesthesia, approximately 500 mL of hemoperitoneum was identified, with the intact fetus floating within its gestational sac in the abdominal cavity (**Figure1**). An 8 cm horizontal fundal uterine rupture was identified. Conservative treatment was performed, including uterine repair (**Figure2**), meticulous abdominal cavity lavage with 4 liters of warm saline, and placement of a Redon drain in the Douglas pouch. No abnormalities were noted in the upper abdominal cavity. The patient received a blood transfusion. The fetus weighed 185 g. Postoperative recovery was simple, and the operative report was provided to the patient.



Figure 1: Intact fetus within its gestational sac



Figure 2: Conservative treatment, Hysterorraphy uterine repair

Discussion

Complete uterine rupture is a full-thickness disruption of the uterine wall, including the adjacent peritoneal layer, which may occur spontaneously in 25% of cases or be trauma-related, following a shock, obstetric maneuver, or instrumental intervention.

Uterine rupture is traditionally perceived as a complication occurring mainly in women with a history of cesarean section or other uterine surgeries. However, uterine rupture in an unscarred uterus, meaning a uterus without prior scars or apparent congenital malformations, although rare, is a concerning and often dramatic condition for both the mother and fetus.

In some cases, spontaneous ruptures can occur in the absence of obvious risk factors. These ruptures may result from congenital weakness of the uterine wall, where undetected microscopic structural defects increase vulnerability to rupture under the pressure of uterine contractions [5,6].

It is common to distinguish complete uterine rupture, characterized by a total disruption of the uterine wall that connects the uterine cavity with the peritoneum (membranes may or may not be intact), from incomplete rupture (dehiscence), which is characterized by disruption of the endometrium and myometrium without affecting the visceral peritoneum [6]. Its incidence is low in industrialized countries (0.2%–0.8%) [7,8]. Although rupture of an unscarred uterus has been documented, uterine scarring remains the primary

risk factor, as does high parity [9]. The type of uterine incision is the main factor increasing the risk of uterine rupture, with a higher risk for a corporal incision compared to a low transverse segmental incision [10,11].

Uterine rupture can occur at any gestational age but happens in 75%–80% of cases during labor, especially when attempting vaginal delivery after cesarean section, and during the second half of pregnancy [8,9]. A rupture occurring early in the second trimester, as presented here, remains exceptional in the literature. Early uterine rupture occurs in specific situations (cornual or interstitial pregnancy, history of perforation, pregnancy on cesarean scar, etc.); however, the small number of reported cases does not allow for reliable risk factors to be defined [9].

The most common predisposing factor recognized by all authors is a uterine scar from a previous cesarean section. Without an operative report of previous cesareans in this case, an anterior corporal scar could explain this early rupture. Clinical manifestations are variable, and the diagnosis is most often suspected during labor based on a cluster of signs, including fetal heart rate abnormalities, secondary onset abdominal pain, genital hemorrhage, macroscopic hematuria, and changes in uterine contractility [8,10]. However, in an early pregnancy, as presented here, symptomatology remains variable. The occurrence of metrorrhagia seems less frequent, but signs of hemoperitoneum are almost constant [7,9].

Abdominopelvic ultrasound is primarily useful for detecting hemoperitoneum, but the diagnosis is ultimately confirmed



intraoperatively during laparotomy [11]. Although in Diallo's series [12], 88% of uterine ruptures occurred in the lower segment, Voogd [13] and Margulies [14] noted that ruptures occurring before labor involve the uterine body, while those occurring during labor affect the lower segment. Surgical repair modalities (hysterectomy or conservative treatment) depend on the anatomical lesions observed, the patient's age, parity, socioeconomic level, ethnicity, and the operator's experience, among other factors. Until the 1980s, hysterectomy was the recommended treatment for complete uterine ruptures, and in the absence of hysterectomy, tubal ligation was performed [15]. However, cases of successful pregnancies after conservative management of uterine rupture challenge these established practices [9]. According to O'Connor et al. [16], conservative treatment with uterine repair should be undertaken when technically feasible. Subsequent pregnancy is not contraindicated after uterine rupture, but the risk of recurrence (4%–19%) increases, particularly in cases of anterior corporal scarring [5].

In the reported case, the patient presented with a spontaneous uterine rupture in the early second trimester. This rupture may have resulted from congenital uterine wall weakness with undetected microscopic structural defects. Although abdominal pain and vomiting are classic signs of uterine rupture, it was difficult to suspect this diagnosis due to the early gestational age and the nonspecific nature of these symptoms, which can also occur in cases of peritonitis or other syndromes. Considering the patient's young age and desire for maternity, conservative treatment was chosen, despite the recurrence risk in a subsequent pregnancy being estimated at 4%–19% [5].

Conclusion

Uterine rupture in an unscarred uterus, while rare, constitutes a major obstetric emergency requiring prompt management. Early diagnosis is critical for maternal and fetal survival. Advances in pregnancy monitoring, careful management of labor induction, and vigilance for underlying risk factors, even in unscarred uterus, are key preventive measures.

References

1. Sandhu AK., Al-Jufairi ZA. A comparative analysis of uterine rupture over two decades. *Saudi. Med J.* 2002;23(12):1466–9. [PubMed]
2. Chennoufi MB., Ben Temime R., Chelli D., Ben Romdhane B., Khemiri B., Maghrebi H., et al. Uterine rupture: A report of 41 cases. *Tunis Med.* 2002;80(1):49–52. [PubMed]
3. Miller DA., Goodwin TM., Gherman RB., Paul RH. Intrapartum rupture of the unscarred uterus. *Obstet Gynecol.* 1997;89(5 Pt 1):671–3. [PubMed]
4. Catanzarite V., Maida C., Thomas W., Mendoza A., Stanco L., Piacquadio KM. Prenatal sonographic diagnosis of vasa previa: Ultrasound findings and obstetric outcomes in ten cases. *Ultrasound. Obstet Gynecol.* 2001;18(2):109–15. [PubMed]
5. Elkady AA., Bayomy HM., Bekhiet MT., Nagib HS., Wahba AK. A review of 126 cases of ruptured gravid uterus. *Int Surg.* 1993;78(3):231–5. [PubMed]
6. Sweeten KM., Graves WK., Athanassiou A. Spontaneous rupture of the unscarred uterus. *Am J Obstet Gynecol.* 1995;172(6):1851–5. [PubMed]
7. Al-Zirqi I., Daltveit AK., Vangen S. Infant outcome after complete uterine rupture. *Am J Obstet Gynecol.* 2018;219:109.e1–109.e8. [Ref]
8. Sandhu AK., Al-Jufairi ZA. A comparative analysis of uterine rupture over two decades. *Saudi Med J.* 2002;23(12):1466–9. [PubMed]
9. Smith JG., Mertz HL., Merrill DC. Identifying risk factors for uterine rupture. *Clin Perinatol.* 2008;35(1):85–99. [PubMed]
10. Bretones S., Cousin C., Gualandi M., Mellier G. Uterine rupture: A case of spontaneous rupture at 30 weeks in a primiparous woman. *J Gynecol Obstet Biol Reprod.* 1997;26:324–7. [PubMed]
11. Hamilton EF., Bujold E., McNamara H., Gauthier R., Platt RW. Dystocia among women with symptomatic uterine rupture. *Am J Obstet Gynecol.* 2001;184:620–4. [PubMed]
12. Diallo FB., Idi N., Vangeenderhuysen., Baraka D., Hadiza I., Garba M., et al. Uterine rupture at the central



- reference maternity hospital in Niamey: Epidemiological aspects and prevention strategies *Dakar Med.* 1998;43(1):74–8. [PubMed]
13. Voogd LB., Wood HB., Powell DV. Ruptured uterus. *Obstet Gynecol.* 1956;7(1):70–7. [PubMed]
14. Margulies D., Crampazona JT. Rupture in the intact uterus. *Obstet Gynecol.* 1966;27(6):863–8. [PubMed]
15. Chibber R., El-Saleh E., Al Fadhli R., Al Jassar W., Al Harmi J. Uterine rupture and subsequent pregnancy outcome: How safe is it? A 25-year study. *J Matern Fetal Neonatal Med.* 2010;23(5):421–4. [PubMed]
16. O'Connor RA., Gaughan B. Pregnancy following simple repair of the ruptured gravid uterus. *Br J Obstet Gynaecol.* 1989;96(8):942–4. [PubMed]